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THE
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Poetry.

LECTURE FROM MRS. BROWN.

Why don't you take the paper Brown ?
I'm sure it is a shame,
That we can't get the news from town
Before it's old and tame ?
There's Deacon Jones across the way,
Who gets one every week,
And he can beat you all they say,
When called upon to speak.

The reason, sir, is plain you know,
For when he reads it through,
His words like milk and honey flow,
And all he tells is new ;
So he is taken by the hand
For what he can impart ;
While old and young around him stand,
And say the Deacon's smart.

Oh, is it not a shame, I say,
To hug your purse so tight,
When a mere bit of clay
Would set the matter right ?
What good is gold, now can you tell,
To any of our kind,
Unless it keeps the body well
And benefits the mind ?

Why don't you take the paper, Brown ?
I'm sure it is a shame,
That we can't get the news from town
Before its old and tame !
Now let us quit at once this way,
And take a worthy start,
And ere a year our friends will say,
" The Browns are getting smart."

Stand as an Anvil when Beaten Down.

" Stand, like an anvil," when the stroke
Of stalwart men falls fierce and fast :
Storms but more deeply root the oak,
Whose brawny arms embrace the blast.

" Stand like an anvil," when the sparks
Fly far and wide, a fiery shower ;
Virtue and truth must still be marks,
Where malice proves its want of power.

" Stand like an anvil," when the bar
Lies red and glowing on its breast :
Duty shall be life's leading star,
And conscious innocence, its rest.

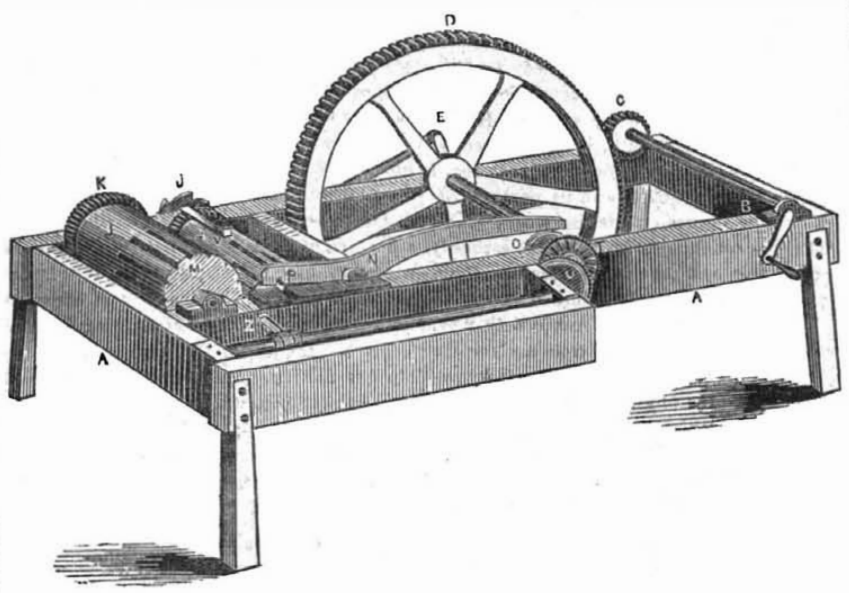
" Stand like an anvil," when the sound
Of ponderous hammers pains the ear :
Thine, but the still and stern rebound
Of the great heart, but cannot fear.

" Stand like an anvil." Noise and heat
Are born of earth, and die with time.
The soul, like God, its source and seat,
Is solemn, still, serene, sublime.

Pointed Shoes.

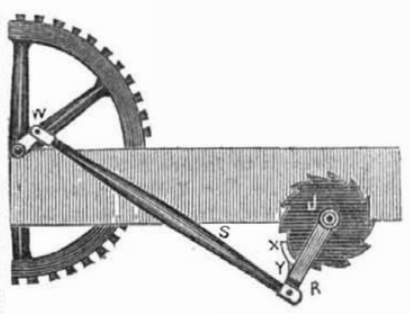
In the reign of William Rufus was introduced the fashion of wearing shoes with long points, turned up before, and fastened to the knee with a chain. The clergy endeavored, by their preaching, to abolish the ridiculous custom ; but the people still persisted in wearing long points to their shoes in spite of all opposition.

NEW SPIKE HEADING MACHINE.---Figure 1.



This is a machine invented by Mr. E B. White, of Nashua, N. H. and it embraces great simplicity in its arrangement and construction. A, is the frame of the machinery. B, is a crank or driving handle, to propel the pinion C, which drives the large cog wheel D. On the shaft of the cog wheel D, is a cam O, inside, fig. 1, and cutside of the frame is cog wheel gearing to drive a horizontal shaft which works the *header* or die Z. The rods of iron are thrust into angle grooves L, in the small steel roller V, in the opening P, under the knife N. This knife has a notch to suit one half the square of the nail above, and the roller has the long groove for the other half square of the spike below. Whenever the iron is inserted in i's groove in P, under the large knife N, the cam O, strikes the end of N, tipping the jaw down upon the iron rod and cutting it off at the right length. The roller V, is stationary while the iron is cut-

Fig. 2.



ting, but whenever it is cut, the roller moves onwards with the iron and carries it so as to bring the said iron into the opposite groove in the other steel roller M. Both grooves in the rollers then mesh together and form one square groove with the cut iron, it having its point abutting on the solid steel, as the grooves only extend along part of the periphery of the rollers. At the very moment when the two grooves mesh together, the rollers then cease moving, for the knife N, is then cutting another spike in the grooves P, and at that time the heading die Z, is squeezed up against the outer end of the cut spike, and pressing a head on it. This heading die, has a reciprocating motion to coincide with the rotary intermittent motion of the two rollers V M. The header is therefore secured on the horizontal shaft by an eccentric, which works through a guide opening in the side of the frame. The manner in which the spikes are cut and headed will thus be easily understood. The die Z, can be made to form a beautiful head of a round or square pattern. The way the rotary intermittant motion is given to the rollers is best represented in the section view, fig. 2. The two steel rollers are connected together by cog wheels K J, inside of the frame, seen in fig. 1. On the outside is the ratchet wheel J, fixed on the axle of the roller V, and outside of the said ratchet wheel, is affixed a small crank arm R, on the inside of which is a pall Y, which catches into the teeth X, of the ratchet wheel. From the large wheel D, by a crank W, is a pitman S, which is attached to the crank P. It will therefore be observed, that every revolution of the crank W, will move the ratchet wheel one ratchet, and the ratchet wheel will have no motion when the pall is moving back, to gather up another ratchet. In this way an intermittant rotary motion is communicated to the rollers. Mr. White has taken measures to secure a patent for his combination.

Rise of a Factory Boy.

The Nashua, N. H. papers, speaking of the eloquent Fourth of July oration by Mr. Banks in that place, mentions that some years ago, the orator of the day was employed in the mills of the Nashua Manufacturing Company then within the reach of his voice. A lady remarked that the day must have been a proud one for him. He left the mill and the place, —and now, by his individual exertions, he is a member of the Massachusetts Bar, and an influential Representative in the Massachusetts Legislature.

[There are not a few factory boys whom we know, that stand *pretty considerable high* in the world. We believe that our factory operatives are among the most intellgent (if not altogether) of any other class of operatives in the Republic.

Grapes at all Seasons.

Mr. J. F. Allen, of Salem, Mass., it is said to be the greatest producer of grapes by artificial heat in the United States, having nine graperies. Some of his hot-houses are over one hundred feet in length, and ripe grapes of the choicest varieties are hanging on the vines every month in the year. His produce this year will be about 5000 pounds, and his arrangements promise to double the yield—for market of course. Peach trees and apricots are cultivated in the same way.

" The New Zealanders," says Black, " on being civilized have become dyspeptic ! They eat more, fight less, and die faster."

About 800 persons have united with different churches within the last 8 months, in the Colorado Valley, Texas.

RAILROAD NEWS.

Worcester Railroad.

The Report of the Worcester Railroad states that the arrangement between that corporation and the Western Road has been renewed, with some modifications, for three years. The relaying of the track with heavy rail is not yet completed, but arrangements have been made to accomplish it speedily.—The new rails are to weigh 64 pounds to the yard, to be fastened at the joints by strong chains, firmly drawn upon the ends of the rails, and each rail of six yards in length, resting upon seven substantial crossties. Thus constructed, the Directors think the Road will be one of the firmest and most durable in the country. The Framingham track will soon be completed.

Suit for Ejecting a Passenger from a Railroad Car.

Mr John F. Bodine, of Williamstown, Camden Co. N. J., has commenced an action in the District Court in Philadelphia, against the Philadelphia and Trenton Railroad Compnny, to recover damages for being ejected from the cars of the company a short time since. Mr. Bodine was at New York, the fare from which city to Philadelphia for through passengers, is four dollars. The fare from New York to Trenton is two dollars and fifty cents. Mr. Bodine engaged passage at New York for Trenton, and paid his fare, $2,50. When he arrived at Trenton he remained in the cars, and after they had again started his fare was demanded. He inquired the amount and was told it was seventy five cents, but it was asked of him whether he had not come from New York. He said that he had, and was then told that it was $1 50. He inquired the reason, and was told that the company was determined that passengers should not come it over them that way." He tendered the seventy five cents, but it was refused, and he was informed that if he did not pay the $1 50, he should be put out of the cars at the next stopping place. He did not pay the sum demanded, and in accordance with the threat, when the train arrived at Bristol, he was forcibly seized, ejected from the cars, and forced to remain at Bristol all night.

[It is time that something was done to break up the scandalous system of charges between Jersey City and Philadelphia.

The track of the Schenectady and Saratoga Railway, is to be relaid with a heavy rail.

Another Tubular Bridge.

One of the tubes to form part of the celebrated Britannia Tubular Bridge over the Menai Straits in Wales, England, was recently floated to the position from which it is to be raised to its seat, and was the subject of great excitement, and no wonder. It is 472 feet in length and 30 feet in height. It is made of oblong plates of iron, and placed so as to look like stone work. There are no less than 327,000 rivets in a single tube and the whole weighs (one tube) 1600 tons. The Bridge will be formed of four such tubes. Each tube is to be raised 102 feet above high water. We will notice this event when it takes place.—This project is the most gigantic stretch of mechanical genius and enterprise, in the history of the world. Robert Stevenson, Esq. is the inventor and chief engineer.

The Wheeling Bridge, across the Ohio, has been protested against by the citizens of Pittsburg, on the ground of a " public nuisance," as an obstruction to the free navigation of the Ohio River. Their protest invites the attention and co-operation of all other cities and villages interested in the freedom of the waters of the Ohio.

The bridge as intended to be built, is said to be too low for the funnels of some boats.

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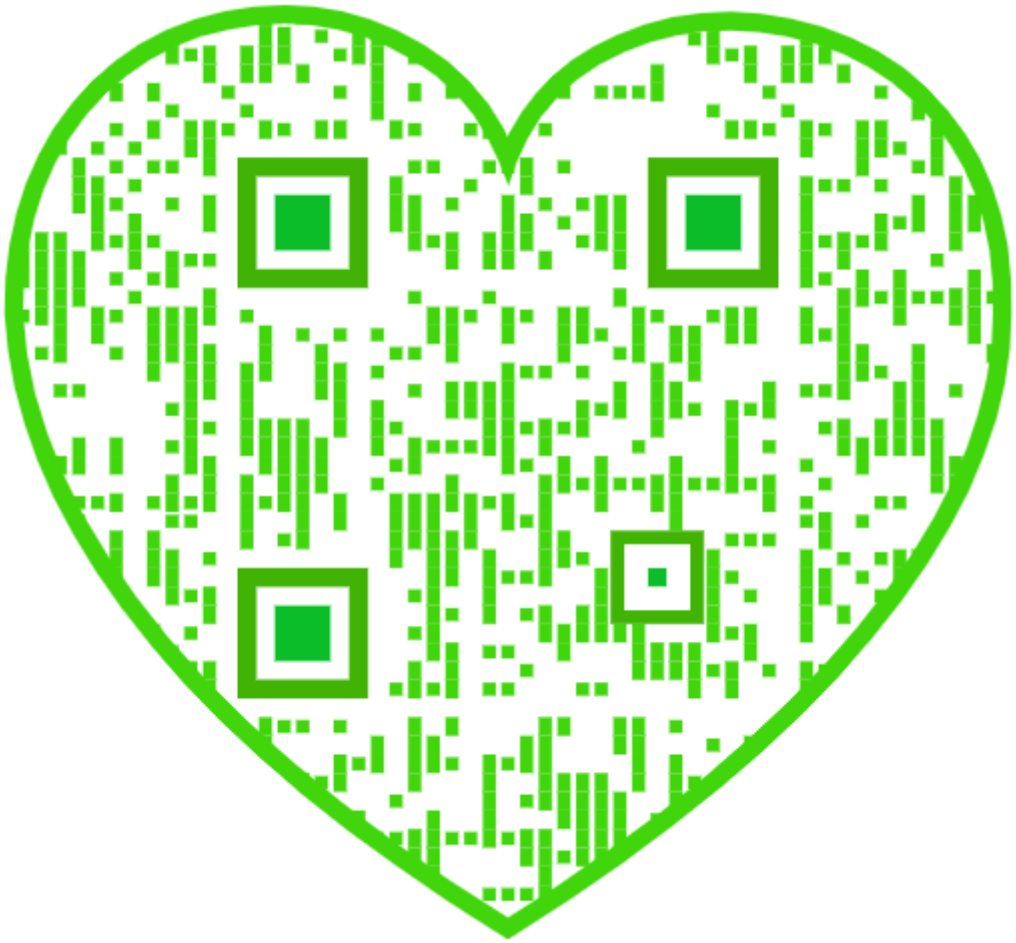

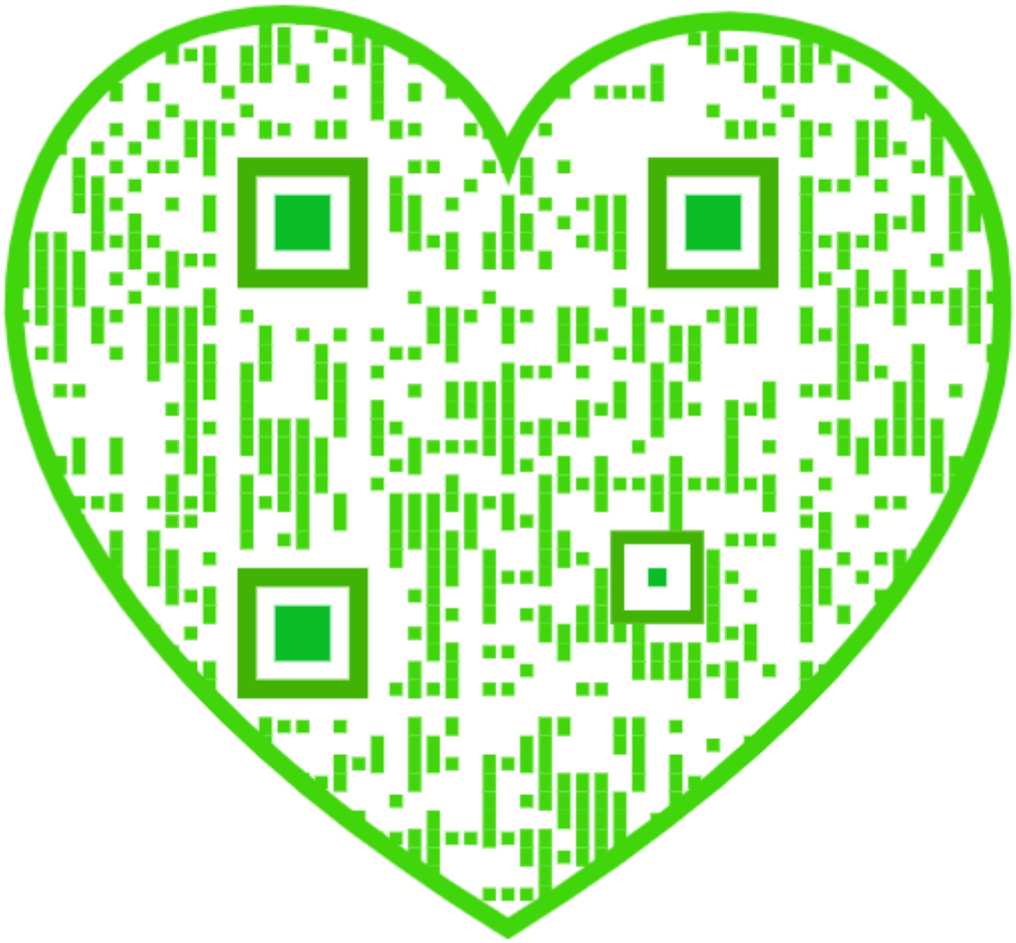

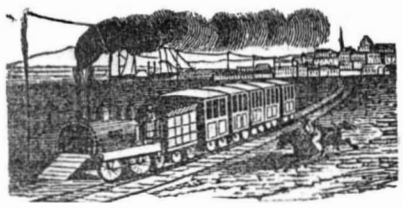

Cholera.

Wednesday, July	18—	106	new cases,	40	deaths.
Thursday,	" 19—	87	"	36	"
Friday,	" 20—	83	"	26	"
Saturday,	" 21—	94	"	36	"
Sunday,	" 22—	75	"	30	"
Monday,	" 23—	79	"	38	"
Tuesday,	" 24—	89	"	38	"

Chloride of Lime.

We cannot urge too strongly upon the attention of city authorities, the free use of Chloride of lime throughout the streets. A few hundred dollars expended in this way in place of "Aldermanic Dinners" and "gorgeous public receptions" would contribute essentially to the health of cities, and confer an especial favor upon all classes, particularly the poor who are compelled to live in bad ventilated apartments. We are impressed with the opinion, that notwithstanding our daily press has advocated this subject strenuously, it has as yet failed to claim any considerable attention from our Common Council. At any time during the warm season, whether an epidemic prevails or not, nothing tends to purify the condition of the streets more than chloride of lime. We are glad to observe that our neighboring city Brooklyn has adopted this plan to a general extent.

A Painful Picture.

A correspondent of the Boston Transcript, writing from St. Louis, on the 19th instant, says :

"What an afflicted city is this ! Fire, pestilence, army worm, rains and fogs, discourage and oppress us. Calamities are all around us. Death is everywhere. Cholera is dealing its blows to the right and left, and thousands of our people have been hurried to their graves. A well man now, may be, an hour hence, a corpse. The sextons, the undertakers, and even the horses of the city, are worn out with the dreadful work of burial.—Carts and furniture wagons have to supply the places of hearses, which, though numerous, are insufficient to carry out the coffins, though piled one upon another.

Many dead bodies lie, without a friend to execute their rites of interment, until a public officer or a Sister of Charity comes to put them in the ground. Some persons to save expenses, which they are not able to bear, bury their friends in the woods or on the sand bars of the river. Many is the house, lately full of inhabitants, that now has scarcely one left to tell the story of the departed. Husband and wife will take their tea together at evening, and before the next morning, one or both is ready for the grave.

Some of the sextons, overtasked, bury the dead at half the usual depth. The city government have abdicated their powers before an indignant populace, and the duties of the Board of Health are devolved upon a committee of citizens. The public school houses are turned into hospitals, and the chief business of the living is to take care of the sick and dying, and to bury the dead. Many members of the City Government, and probably not less than 10,000 of the citizens, have fled. The stillness of the Sabbath reigns, while death is doing its work. The newspapers do not, it is said, report half the cases, because all the forms of law are paralyzed, and officers do not discharge their duties. A dullness, nervousness and lack of energy are manifested by every one. The atmosphere is hot and humid. Flies swarm in myriads. Vegetation grows with the rankest luxuriance, and animal life sinks proportionably."

Essentially Mean.

A man in Baltimore took the benefit of the Insolvent Act lately to escape paying a poor women $2 40 for binding five pair of gaiter boots, for which she had got a judgement before a magistrate. His customers ought to see if their purses are safe after they enter his store.

Cholera Specifics, Opinions, &c.

Below we publish a number of articles from various sources about the cholera. We will continue the same next week. As the Scientific American as a standard work, and some thousand volumes of it are bound up every year, these articles will go down to future ages, to show how "doctors differ," at least how their opinions conflicted so much in regard to the cholera in 1849.

A New Remedy for Cholera.

To the President of the Board of Health :

NEW YORK HOSPITAL, July 20, 1849.

SIR.—I had the honor to call the attention of the Board of Health to a saturated solution of hydro-sulphuric acid as a remedy for Cholera. Since then, having been seriously ill, I was unable to pursue the subject. Having now recovered my health, it is again receiving my attention, and from all I can see, I have increased confidence in its power of arresting the disease, in its first stages—and I make this communication to you to earnestly request that you require the Sanitary Committee to give it their attention and a fair trial.

The dose has been ½ oz. mixed with 2 oz. water. Some was procured from me for the Centre st. Hospital, and never, to my knowledge, used,—the physician of which I have tried to see a dozen times at least. It may be had of me at the Hospital, free of charge.

Yours, Respectfully,

LAWRENCE REID, Prof. of Chemistry.

Onions for Cholera.

During the prevalence of the Cholera in 1832, in many places the onion was the only vegetable used upon the table, it being considered the most healthy. In many places large quantities of this vegetable were pounded up and scattered through the streets. It is well known that in instances where fever prevails onions are frequently pealed and placed around the sick room with a view of purifying the air. If it is a fact that onions will purify the air where fever prevails, will not the effect be the same in time of cholera.—Bristol Phenix.

Electricity and the Cholera

In confirmation of the theory of Audrand, we learn that the battery at the Telegraph Office has worked very badly since the cholera became prevalent. The operators could not account for it, and thought of getting a new one.

We should be glad to hear whether the same phenomenon has been observed eleswhere.—Richmond Whig.

Gas and Cholera.

Not a single person employed in the gas houses in Cincinnati and Louisville, it is stated as a fact, has yet been attacked with cholera. At the former ninety are employed, and at the latter, thirty ; and the gas house at Cincinnati is situated in the lowest and most unhealthy part of the city, in the midst of other factories that have been compelled to stop work from sickness and death among their hands. We give these facts for what they are worth.

Quinine and Cholera.

The Courrier des Etats Unis states that an ex-physician of the French army in a note addressed to a Medical Journal of Paris, says :

"I have the honor of proposing to the National Academy of Medicine the employment of a preventative which I have no doubt will succeed against the cholera. It is the Sulphate of Quinine, which substance modifies the susceptibility of the organs to such a degree, impressing them, we might say, with impunity, that they lose their aptitude for morbid impregnation, and then the epidemic ceases to have any power over them. We have full evidence of its virtues in this respect from its wonderful efficacy in preventing attacks of intermittent fever."

Dr. Cartwright's (of New Orleans,) Treatment of Cholera.

My composition is composed of 20 grains of chalk mercury, (Hydragyrum cum creta) or English calomel, 20 grains Cayenne pepper, 10 grains gum camphor, 15 grains calcined charcoal, and the same quantity of gum arabic. The above united constitute a dose for an adult. It is best given in two table spoonsful of cold water. It should be swallowed at once without stopping to taste it. It generally causes a sweat to break out in the stomach, bowels and extremities, with little sips of hot camomile, sage, balm, or mint tea or chicken water. Then when the sweat commences, all that is necessary is to support the sweat by drinking freely of warm teas or chicken water, until the purgative part of the composition has time to empty the gall bladder of its strabilious contents, and to enable the blood to circulate through the liver. The heat to assist the above powder in causing sweat, may be applied to the extremities, in the shape of bottles filled with hot water, and to the stomach and bowels, by a jacket or shirt wrung out of scalding water and rolled into a ball as large as a child's head, wrapped in a dry flannel.

As soon as the powder is swallowed, a napkin dipped in cold water should be stuffed into the mouth, to take out the burning taste and to prevent vomiting. If instead of a sweat a flushing of the face and heat of the skin be caused by the hot applications, the lancet should be used to bring the system down to the sweating point, or a free cupping over the stomach. Drinks should be given while the blood is flowing, to prevent the loss of blood from debilitating, which it will do, if the drinks be absorbed ; blood letting, by removing venous plethora, facilitates absorption.—A sweat will stop the diarrhœa and vomiting, if it can be established.

Cholera and Thunder.

A medical man, writing from Paris, during the late visitation of cholera, says that nothing checked the disease but the appearance of a violent storm with much thunder and lightning. At the two last meetings of the Academy of Medicine, nearly all the members, with M. Velpeau, the President, agreed that the cholera was contagious, under certain circumstances. The English physicians do not coincide in this opinion.

Bed Bugs.

The Cincinnati Dollar Weekly says "If any one, will take a coarse blanket, one of sufficient superficies, and spread it over his or her mattress,—if it be large enough to hang over the sides of the bed so much the better, on the top of it lay a sheet and pillows, so as to be surrounded on all sides by a woolen surface and I guarantee him or her, or both together, a peaceful night's rest, so far as the backbiters are concerned ; they may march round your encampment, on bloody thoughts intent, but you are as safe from their fangs as you would be from a troop of Indians, were you inside of the "Moro Castle" and they outside whooping for your scalps.

"In the morning on awaking, you may indulge in the pleasing reflection, that if you cannot extirpate them, they cannot lacerate you as was their wont."

Present to Prince Albert.

A Mr. Keller, of New York City, is fixing up a reaping machine, from Mr. McCormick, the manufacturer, at Chicago, to be forwarded in the next packet, as a present to Prince Albert.

["The fat hog is always well greased."—Now if some of our republican philanthropists of the above kidney, would just give their presents to those who needed them, they would be doing good to themselves and others. Let Mr. McCormick keep his *reaper* at home. There are Irishmen enough out of work in Britain to reap all the harvest.]

Reform of the British Service.

From and after the first of July, no person will be recommended for a commission in the British service until they have been examined by competent persons, appointed by the Commander in chief, in the ordinary branches of polite education, and unless they have shown a competent knowledge of English literature of arithmetic, history, geography, fortification, and also of Latin, French and German.

Happy Fellows.

The Nonconformist remarks : "Bishops constitute a class of men who seldom complain. Their path through life, at least after their introduction to their sees, is commonly an easy one. They ride to the last station of mortality in first class carriages."

Sweet Oil of Turpentine.

A most important chemical discovery, says an English paper, has been recently made by means of which oil of turpentine can be freed from its peculiar smell so completely that not only is it inodorous, but can be impregnated with any desired perfume, without at all deteriorating from its useful properties. The eminent chemist, Dr. Serney, who has analysed the sweet oil of turpentine, states that while all the useful properties of oil of turpentine are preserved, in fact all its deleterious qualities are completely obliterated. The doctor also states that paint when mixed with sweet oil of turpentine, is free from smell, and does not emit those vapors which are so prejudicial to health ; and that the use of sweet oil of turpentine is a certain preventive of painter's colic, and by its use house painting becomes a perfectly inodorous process.

The Hay Crop in Maine.

The Maine Farmer says that the prospect of the hay crop in many parts of Maine, is not encouraging, owing to the fields having suffered during the past winter from the severe cold, and to the fact that the past month was very dry. Nevertheless, as the time for cutting will be latter than usual, should copious rains fall soon, they would materially increase the crop.

Great Steamboat Speed.

The steamer Alida made the passage between New York and Albany, on Friday of last week, in six hours and fifty one minutes running time. We believe this is the shortest passage ever made between the two places on record, being at the rate of nearly 24 miles per hour. We have never heard of such speed for the same length of time ever being performed by any steamboat before.

A Cow Worth Having.

Mr. Geo. B. Brinckerhoff of Owasco, made from one cow, five years old, the past spring, eighteen lbs 2 ozs. of butter for the week ending Saturday, June 30th. This quantity she averages during the summer season. The Summer she was three years old she made eighteen lbs. per week, and she would have made more for the above week, but for the fact that three of the very hottest days were included in it. In flavor and color it was equal to any we ever ate, and we doubt if it be excelled by the celebrated Orange County butter. The cow can be bought for $150.

[The above description of a Cow, from the Auburn, N. Y. Journal, shows what the Empire State can do in Dairying, but we have some doubts about the eighteen pounds.]

A New Outlet for Yankee Produce.

The Boston Times tells of a shipment from Charlestown (Mass.) of large quantities of boiled lobsters, packed in ice, prepared for the Barbadoes market. This is certainly a new feature in trade, showing unequivocally that the loss of a home market is no obstacle to the determination to do business which every yankee seems to inherit, and exerts the more energetically the greater the obstructions placed in his path.

The earthquake which destroyed Lisbon had its centre of action immediately below the city, and shook "an arc of 700,000 square miles, equal to a twelfth part of the circumference of the globe."

You have only yourself to please, said a married friend to an old bachelor. "True," replied he, "but you cannot tell what a difficult task I find it."

A Lady of Washington, in consequence of inflamation produced by wearing a tight ring, recently had her finger taken off to the knuckle joint. The operation was performed while she was under the influence of chloroform.

The take of mackarel along the Eastern coast, is said to be very excellent this year. We may then expect to have cheap salt fish.

The daughter of the Duke of Hamilton, and wife of an eminent Scotch statesman, has become a Roman Catholic. She was lately divorced from her husband.

The first Electric Telegraph in Ireland, has recently been erected two miles long, between two railway stations at Kingsbridge.

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Water Wheels, their Construction, Disputed Point, &c.

Messrs. Editors.—I take the liberty to address you upon a subject of great importance to millwrights and manufacturers. It is this. "What is the right way to obtain the greatest amount of power from an overshot water wheel? Whether it is by making the driving wheel nearly the same diameter as the water wheel, or by making it of the same radius of the wheel's circle of gyration. The latter plan is that which is laid down in several scientific works, while the former is the plan in general use here, where we have about 300 horse power in use, and it is almost the universal practice in Paterson, N. J. where they pay $500 per foot for water. Now either the books published, or the practice of our millwrights, is wrong. I believe the former, for as I decrease the size of the driving wheel, just in the same proportion must I decrease the size of the pinion to get a given speed to a given shaft, and of course must increase the weight on the teeth of the pinion, to exert the same power on the shaft that drives the radius spindles, or to whatever the power may be applied. I have conversed with several practical and scientific men on the subject, and I find that they disagree materially. For a 30 foot wheel the scientific men contend that the radius of the driving wheel should be about 13 feet, while the practical men say to have the radius 15 feet is equally as good, if not better. I believe that the right plan of building and applying water to wheels and communicating power therefrom, is less understood than that of steam and the steam engine.

I should like to see the following Problem stated in your useful and valuable paper and solved by some of your able correspondents, so that your numerous readers may be satisfied whether the theory or general practice is right.

Problem.—What is the difference in the power transmitted from an overshot water wheel 22 feet diameter, buckets 14 feet long, 18 inches deep from the sealing to the outer edge of bucket, with a 22 feet driving wheel, from which the power is taken, or a 16 feet driving wheel from which the power is taken, the outer wheel the same in both cases, and running 6 feet per second?

Your correspondent C. E. L. of Matteawan, in calculations on the power of the large water wheel built at the Union Works at Paterson, makes no reference to the communication of the power of the wheel, and I presume from this that he does not suppose it makes any difference in the power transmitted, if the driving wheel is nearly the same diameter as the water wheel, or several feet less, say the same radius as the radius of the circle of gyration. On that wheel the driving wheel is nearly as large in diameter as the water wheel.

Let me say that the large wheel built at the Union Works, Paterson, for Mexico, is the best piece of workmanship of the kind I ever saw put together, and would say to your friends that have water wheels to build, that the Union Works is the place to get work done as it ought to be, and at a reasonable price.

Knowing your interest in manufactures, I would state that the Company at this place finished seven thousand tons of heavy rails for the Hudson River and Utica and Syracuse Railroads last year, and are prepared to make any size and shape of iron used in the market. The company have also made about 4000 tons of pig iron since September last.

Yours, &c. G. W. E.

New Jersey Iron Works, Boonton, Morris Co. N. J.

The Ocean.

The Great Pacific Ocean has a larger area than all the dry land on the globe. It covers 50,000,000 of square miles, and 70,000,000 including the Indian Ocean. From Peru to Africa it is 16,000 miles wide. It is generally unfathomable between the tropics, where its depth is so great, that a line five miles long has in many places not reached the bottom.—The Atlantic Ocean, apparently stretching from Pole to Pole, is 5000 miles wide, and covers 25,000,000 square miles.

The German Ocean, now rapidly filling up by the detritus from the land, has in a gr t part of its bed a depth of only 93 feet! and even near the precipitous coast of Norway the depth is only 5460 feet. At a depth of a mile and a quarter the pressure of the sea is equal to 2809 lbs. on every inch of surface. In the Arctic Ocean shells are seen at the depth of 1180 feet, and among the West Indian islands at 180 feet, so that the light which fell upon these shells would have been visible to an eye at least 960 feet deep in the one case, and 360 feet in the other. The color of all water when pure is a fine bright blue, becoming green when mixed with certain vegetable matters, and brownish yellow when derived from mosses. The saltness of the sea is greatest at the parallel of 22° N. lat, and 17° S. lat., diminishing towards the Equator and the poles, where it is least, owing to the melting of the ice. At the Straits of Gibraltar the water is four times as salt at a depth of 617 fathoms, as it is at the surface.

The central area of the Pacific and the Atlantic is occupied with the great oceanic tide-wave which is raised by the joint action of the sun and moon. From this continually oscillating wave, partial waves diverge in all directions, finding their way into seas and estuaries, with various velocities, depending on the form of the coast and the depth of the channel, and the nature of its bed. In some parts of the coast of Britain the tides rise 50 or 60 feet. In the Bristol Channel and the Gulf at St. Malo they rise 47 feet, according to Captain Beechey, and at the bay of Fundy 60 feet, while at St. Helena they never exceed three feet, and are scarcely visible among many of the tropical islands in the Pacific.

The tide at the Equator follows the moon at the rate of 1000 miles an hour. In the Turury channel at Cayenne the sea rises 40 feet in five minutes, and as suddenly ebbs. The highest waves which occur at the Cape of Good Hope do not exceed 40 feet from their lowest to the highest point. Under the heaviest gales the sea is probably tranquil at the depth of 200 or 300 feet.

The tranquility of the ocean is disturbed by currents varying in their extent and velocity, owing to causes both permanent and variable. The great currents which flow from the two poles to the equator, are deflected by the diurnal motion of the earth, acquiring a rotary motion as they advance, till they combine into one great current flowing from east to west, with the velocity of nine miles per hour in some places.

Geology of Charleston, (S. C.)

A late number of Silliman's Journal has a long and able article from the pen of Prof. F. S. Holmes, entitled 'Notes on the Geology of Charleston'--from which we gather the following. That Charleston, the Capital of South Carolina, (says the author,) is built on geological formations identical in age, and in other respects similar to those upon which the great cities of *London* and *Paris* are located, is a curious fact but lately ascertained. The basin-shaped depression of its underlying calcareous and other beds, as determined in the survey just made by Professor Tuomey, occupies a considerable extent between the Savannah and Pedee Rivers, and rests upon an older group of rocks known to geologists as the Cretaceous formation. The sides of this base are estimated to be of sufficient inclination to produce those artificial fountains which are procured by boring, and known as 'Artesian Wells,' through which, by hydrostatic pressure, the water is forced up to, if not above the surface. This basin seems destined to become as famous in the eyes of the scientific world as that of Paris, from the number of new and interesting fossil remains with which it abounds, while those of them already exhumed claim for it a rank above that of the London basin. The explorations already made have brought to light portions of the bones and the grinders of the Mastodon and numerous testacea. Descending below the Post-pliocene formation where these are found, is the Eocene or lower Tertiary, the first stratum being an olive- colored peaty substance, resting upon another of sand, that separates it from the great marl-bed below. This stratum contains a quantity of water, which, in the boring of the Artesian well, rose in the tube to within six feet of the surface, and greatly obstructed the progress of the augur by filling it with quicksand.

Imbedded in the peaty substance before mentioned are numbers of rolled and water-worn rocks of all sizes, from a few inches to a foot in diameter, in which are found the same form of fossils as are seen in the great marl-bed below—whereof, doubtless, these are fragments, broken off by the action of the sea and rolled into boulder-like masses; their nature changed by chemical process, whereby nearly all the lime has been extracted, and the cast of the shells are left preserved in a silicious rock, emitting when broken a fetid odor. These strata—the cause of whose separation and separate deposit yet remain to be determined--including the first ten feet of the underlying marl, may be properly called 'Zeuglodols' or 'Basilosaurus' bed of the Charleston Basin, which Prof. Agassiz has pronounced the "richest cemetry of animal remains that he had ever seen." From it was taken the most perfect skull yet found of the wonderful gigantic fossil cetacean, and by which was determined the true character of this singular animal. Isolated teeth and bones of Basilosaurus, Dimotherium, Megatherium, Equis and nearly fifty species of Sharks, are obtained in abundance. The number of undetermined teeth and bones is considerable. Two specimens of walnuts with the epidermis converted to lignite; three casts of hickory nuts, very perfect and beautiful; and fragments of of wood (now lignite) bored by the Teredo, whose casts in marl are yet preserved, have been also obtained; and, says Prof. Holmes, at every visit something new is added to my stock.

Curious Phenomenon.

It is stated in Chambers' Journal that, on the east coast of Suez, about three hours' ride from Tor, in Sinai, there is a sandstone ridge at one part of which where it is about one hundred and fifty feet high, there is a steep acclivity named Kakuh, having much loose sand laid against it, the produce of the upper part of the hill. When the traveller ascends this sandy cliff, his ears are saluted with a sound which at first resembles the tone of an Æolian harp, then that of a humming top, and finally becomes so loud that the earth seems to shake.

After many speculations about the cause of this phenomenon, the matter was set at rest by the distinguished naturalist, Ehrenberg. "He ascended from the base of the hill, over its cover of sand, to the summit, where he observed the sand continually renewed by the weathering of the rock, convinced himself that the motion of the sand was the cause of the sound. Every step he and his companion took caused a partial sound occasioned by the sand set in motion, and differing only in continuance and intensity from that heard afterwards, when the continued ascent had set loose a greater quantity of sand. Beginning with a soft rustling, it passed gradually into a humming noise, and at length into a threatening of such violence that it could only be compared with a distance cannonade, had it been more continued and uniform. As the sand gradually settled again, the noise also gradually ceased." Mr. James Prinsep, who also inquired into these sounds, states that the effect is produced by "a republication of impulse, setting air in vibration in a focus of echo." It is, in short, a phenomenon in acoustics.

Courtesy.

Shall courtesy be done only to the rich, and only by the rich? In good breeding, which differs, if at all, from high-breeding, only as it gracefully remembers the rights of others rather than gracefully insists on its own rights, I discern no special connection with wealth and birth; but rather that it lies in human nature itself, and is due from all men toward all men. Of a truth, were your schoolmaster at his post, and worth any thing when there, this, with so much else, would be reformed. Nay, each man were then also his neighbor's schoolmaster; till at length a rude visaged, unmannered peasant could no more be met with, than a peasant unacquainted with botanical physiology, or who felt not that the clod he broke was created in Heaven.—Carlyle.

Great Sea Fight.

The following is an account of a wonderful sea fight, taken from a late Dublin Paper:

Capt Rochefort, of the British and Irish Company's screw vessel Rose, arrived yesterday morning from London, and reported having on his passage fallen in with a whale of huge dimensions, on Sunday morning, at two o'clock, seven miles S. W. of the Lizard.—This monster of the deep was suffering severely at the time in an encounter with two well known enemies of his tribe—a sword fish and a thresher. These formidable creatures generally go together through the waters, and are reputed to be joined in a league of unrelenting enmity against the cetaceous animals.—Capt. Rochefort and his crew saw the combat for about three quarters of an hour; but, being obliged to continue their voyage homewards, they had to forego the pleasure of witnessing the struggle to its close, and of taking in tow to Dublin the body of the vanquished whale, for of his being eventually worsted in the affray there was no doubt. The sword fish was seen once driving his tremendous weapon into the belly of his victim, as he turned on his side in agony. The thresher fastened on his back, and gave him some terrific blows which were heard at a distance with great distinctness. The latter not having any power to strike in the water, it was the instinctive policy of the sword fish to make the attack from below; this causing the whale to rise above the surface, which he did at times to a remarkable height; the other assailant which was about twenty feet long, then dealt out his blows unsparingly, with all the force of his lengthy frame—between them their victim suffered extremely; he spouted blood to an immense height, and crimsoned the sea all around to a considerable distance. Being within two hundred yards of the ship towards which the whale appeared to make for protection, the conflict was distinctly visible to all on board. It is considered unusual for marine animals, such as were engaged in the struggle now narrated, to be seen in such a latitude. But this point must be settled by naturalists.

Nankin.

Most, if not all, the nankin now sold in our markets, is of American fabric. It is manufactured from nankin cotton, grown in Georgia, and is spun and woven at the Lonsdale Mills, in Rhode Island. The culture of nankin cotton was introduced to this country by the late John Forsyth, formerly minister to Spain, afterwards Secretary of State, under the administrations of General Jackson and Martin Van Buren. It is now grown in large quantities by many of the planters of Georgia, and commands a ready sale at high prices.

Mr. Forsyth procured the seed from the American Consul at Canton and, at the outset, the project of growing it in this country was deemed wild and chimerical. It is of a darker hue than the China article, and not as handsome.

Variety and Vividness of Colors in Flowers.

The petals of flowers, do not owe their beauty to the color that paints them, for that when drawn off, is dull and dead; neither do they owe their brilliant tints to the skin that covers them. Their lovely appearance is derived chiefly from the bubbles of water which compose their pabulum. Receiving the sun's rays they are enlivened and brightened by reflection and refraction from those drops of water, and from that spot or point of light being seen in every bubble, and striking to the focus underneath. By these means the whole flower would at times be one blaze of light, had not nature, to soften the same covered the petal with an upper and under skin which curtails their diamond-like rays, and leaves them instead a lightness and beauty unequalled by the most exquisite art of the painter.

The Locality of Editors.

The Newark Mercury "means something" when it says, to tell where editors are staying see in their papers what "place" is noticed as "the most fashionable summer resort," and "just the thing for this oppressive weather," with "accommodaiions unsurpassed," and "charges moderate."

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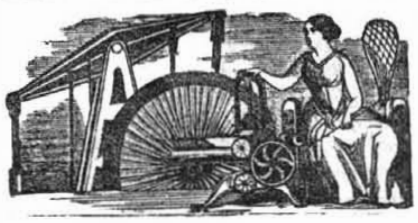


New Inventions.

Improved Loom for Weaving Carpets and other Figured Fabrics.

Mr. James McKenzie, a loom builder by profession, residing at present in Schenectady, N. Y., has made some important and novel improvements on the Carpet Loom, a model of which we have seen and examined.—The improvements consist, 1st, in a new mode of arranging and operating the shuttle boxes. 2d. A new match motion, or way, graduating the let-off speed of the warp beam and the take-up speed of the cloth beam. 3d. A new stop motion. The shuttle boxes are what the inventor terms the quadrant box. They are different in form and motion from both the sliding and rotary boxes now in use. They are quarto rotative, and are shifted by a back spring at any point desired, for they can be set for this purpose. This operation is certainly novel to us and very simple. We should like to see it have a fair trial. The match motion is not easily explained. It is well known bow complicated the common plans are to accomplish this object. His is not complex. The principle of it consists in having a guide apron or rest, pressing by a spring against the warp and against the cloth beams, and according as there is more or less yarn on the one beam, and cloth on the other, to require a corresponding increase of surface motion on the warp beam and a decrease on the web beam, a blade from the lathe at every stroke, is so guided by the guards or rests on the warp and web beams, as to move a ratchet lever the exact distance required in gathering round the teeth of the beams to graduate the let-off and take-up in unison

The stop motion is a double finger one, very different we believe from any in use, which when the thread breaks, at once detaches a crank lever, which throws the driving belt at once on the loose pulley and most effectually prevents all breakage. The improvements on these looms are great simplicity. One can be built for $500, as good perhaps as some that cost $1000. The inventor has taken measures to secure a patent and is prepared to manufacture the looms and make contracts with those who may desire to enter into engagements with him. Address, post paid, to Schenectady, N. Y , where the inventor is at present residing.

Paper and Book Folding Machine.

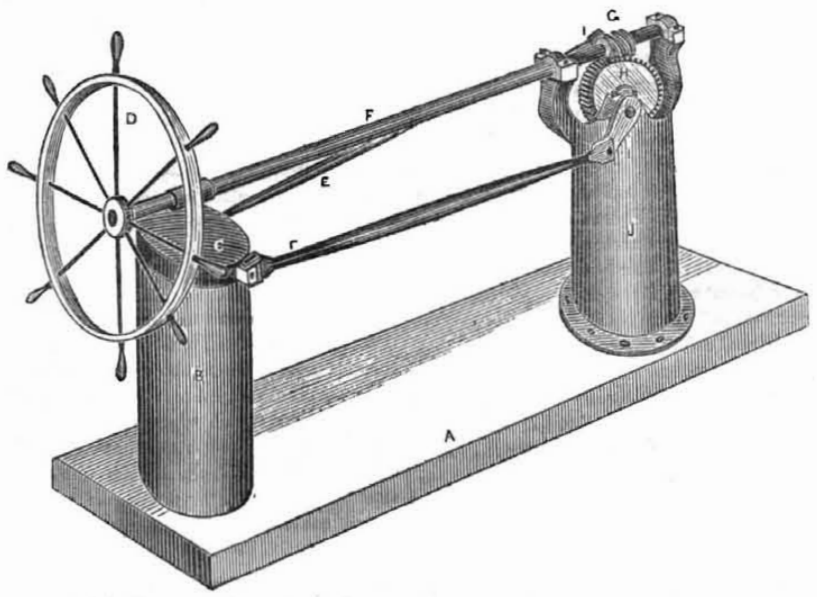
A few days ago we were invited to examine the model of a machine for folding books, at Earle's Hotel, this city. The inventor of it is Mr. E. N. Smith, of Springfield, Mass. and certainly he has exhibited much Yankee ingenuity and skill in the arrangement and combination of parts to accomplish his object. It is formed of various pairs of rollers, each pair secured at right angles to the preceding pair, with a blade or folder pressing between by a cam, to double the paper at the right period, then receding, when the paper is then carried between two other rollers, and acted upon in the same way, until all the folds required, are made, and the paper discharged. The sheets are carried forwards by endless tapes of gutta percha, the same as those used in some printing presses. This machine can be set in a second, to give paper one, two or more folds as desired, by throwing some of the folders out of gear. It is designed to be attached to a printing press, and it must soon come into general use in large establishments at least. We believe that the trade of hand book folding is in a measure "gone." For book folding it certainly has great advantages for neatness over hand work for it folds according to the printed surface. It performs its work with astonishing rapidity. The patent will soon be issued, and Mr. Smith is here to make contracts and sales of his invention.

New Material for Fixing Colors on Cotton, Woolen and Silk Goods.

A Mr. R. T. Pattison, of Glasgow, Scotland, has recently taken out a patent for a new substance entirely, to be used in color making for printed goods. The substance is made from either sweet, skimmed, or buttermilk, the latter kind should be used as early after churning as possible. The milk is taken and put into a kettle and raised to the heat of 160 degrees Fahrenheit, when a thick curd is deposited. The whey is then removed and the curd submitted to a severe pressure in a cheese press in order to free it from whey and moisture, when it becomes a granulated mass. It is then spread out on trays made of fine wood slats, and placed in a drying chamber. When perfectly dried, it is reduced to a fine powder in the way flour is ground, or between crushing rollers. It must be observed that he uses oxalic acid to precipitate the curd in new, or skimmed milk. In mixing this with colors, no positive rule can be given for all shades of colors—the ingenious color maker will soon learn to mix it according to the shades he desires to produce.—But one example will assist to explain its application. For ultramarine blue of a medium shade, take 12 pounds and dissolve it in a gallon of water. Then mix 8 pounds of the flour milk (or lacterine,) and mix it in two gallons of water, in which is mixed 4 ounces of ammonia, which converts the substance into a gummy consistency. This ultramarine and the lacterine are then mixed together and strained through a fine cloth, and rendered into a proper consistency for printing on cloth. It is stated to facilitate the permanency of the coloring matter and affords an excellent substitute for gum.

This is something which should arrest the attention of our calico printers, in order that they might give it a fair trial, as the supposition is uppermost in the mind, that Mr. Pattison would not pay about $600 to get a patent for the article, if it was not of some importance.

IMPROVED STEERING APPARATUS.



This is a most valuable improvement on Steering Apparatus, invented by Mr. J. E. Andrews, of Boston, Mass., and to those who are acquainted with his former apparatus, the superiority of this will at once be evident.

A, is the deck. B, the rudder post, placed different from others, to apply the great lever power. C, is the head of the rudder post.—D, is the steering wheel. F, is the wheel shaft which passes through a support in the head of the rudder post, to show the parts in the simplest mannar, but it is intended to support the shaft by a bearer independent of the rudder post, to allow the rudder post to rise without lifting the wheel shaft, as rudders are sometimes so lifted by heavy seas, or in rivers striking against a sand bar, &c. The shaft F, is also supported on a bearing post J, placed behind the rudder post. This bearing post has two journal boxes on it for the shaft F, and also bearings for the axle of the cog wheel H. G, is a worm screw on the shaft F; it meshes into the wheel H H, the axle of which extends out on both sides, and has universal joints on its extremities, to turn in every direction. To these universal joints are attached cranks I I, one on each side, united to the connecting rods or horizontal arms E E. These arms are connected to two short arms passing transversely through the head of the rudder post. These short arms have universal joints on their extremities like the axle of the wheel H. The connecting rods E E, have therefore a perfect freedom to act without much friction, by the combination of these joints which move freely in every direction. By the combination of these different mechanical parts, the power of this steering apparatus is apparent, and bringing the cranks to the dead points, no sea can budge the rudder. In that case, it has a great advantage, and it can therefore be managed much easier than those in common use. Sea captains of the highest professional qualifications have given the most favorable opinions regarding the merits of this invention, for which Mr. Andrews has taken measures to secure a patent. For further particulars address the inventor.

Improved Feed Apparatus for Carding.

Messrs. Webster & Groves, of Rockville, Ct. have made an improvement in the Feed Apparatus of Carding Machines, for which they have taken measures to secure a patent, and which from a fair trial, has proven itself to be of great utility. The difference between this improvement and the common feed rolls, consists in having a convex surface feed in the wool on a concave surface. The difference is a very pointed one. The wool is finer spread on the breaker, taken up more evenly and there is far less clogging than by the common way of feeding.

New Process of Silvering Glass and other Surfaces.

We learn from our able and most valuable foreign exchange, the "London Patent Journal," that Mr. Thomas Drayton, of Regent street, London, a practical chemist, has recently secured a patent for improvements for silvering glass and other substances. The glass is silvered by causing the silver to be precipitated on the glass and causing it to adhere thereto, without previously coating its surface with any material. First, one ounce of hartshorn or ammonia, two ounces of the nitrate of silver, 3 ounces of water, and 3 ounces of the spirit of wine, are all mixed together and allowed to stand for 3 hours, when it is filtered.

To use this mixture, to every ounce of it add an ounce of saccharine matter, (sugar,) dissolved in half a pint of water and alcohol (half and half) and this is allowed to stand three hours to dissolve. It is then fit to silver glass or other surfaces. The fluid will deposit the silver on the surface of the article, and the glass during the process should be kept at 190° Fahrenheit. This method of silvering is stated by Mr. Drayton, not to emit any unhealthy or disagreeable effluvia, and that it is more durable than the ordinary silvering, not being affected by heat or damp and therefore well adapted to any climate. It is good to give the surface a coat of mastic varnish afterwards. It is stated to be as applicable to the silvering of metals as glass. It is certainly a wonderful discovery and improvement over the old system, or other systems at present in use.

In 1841, we think it was that Mr. Drayton made his first discovery for improvements in silvering glasses. By his first process, he used naphtha, oil of cassia, and a mixture of the oil of cloves. The other ingredients were the same as that described in his new patent with the exception of the sugar. This is a new ingredient, and it seems to answer the purpose of three old ones, which are left out. In 1840, we believe that Dr. Stenhouse first called attention to this subject, by precipitating a pure coat of silver by means of aldehyde, &c. The old quicksilvering process was very unhealthy.

New Measuring Instrument.

Mr. J. Palmer, of Albany, N. Y., has invented a new instrument for measuring, which is said to be well adapted to the measuring of all kinds of forms, round, square, &c., answering the purpose of a substitute for both dividers and calipers. If such is the case, it must be a valuable instrument indeed.

Bakewell's Telegraph.

The London papers say, that Mr. Bakewell's "Copying Telegraph" writes four hundred letters per minute. He has lately secured a patent for it, the specification of which we have received, from which, we are convinced, that the papers accord to it too much merit.—It never can write 100 letters much less 400 per minute. It never can be employed to compete with others, in its present state.

New War Projectiles.

One of the military innovations that have marked the war in Hungary is the Austrian fire rockets. These rockets have been ably directed not only against towns, but against bodies of troops. There have also been used, both in the Austrian and Hungarian armies, probably rockets, carried by corps of foot bombardiers able to march with the infantry. Each man carries three of these small sized projectiles. Another man carries a rest framed of wood on which the rocket is placed and directed. The Austrians have been the first to bring into practice, to so great an extent this new and terrible means of destruction. It has been stated that these Congreves, employed in a battle, ranged by the Austrian bombardiers, who have practised them for many years, have produced a tremendous effect, particularly upon the Hungarian masses of cavalry. They are tubes of wrought iron brought to a point, pierced with holes, and filled with incendiary matter, and are so charged as to emit above them, at the end of their flight, small streams of liquid fire. The sharp hissing sound is much more terrifying to the horses than the noise made by the passage of the bombshells, and one of them is quite enough to throw a whole squadron into disorder. The Hungarian army, having found large stores of these rockets in the arsenals which fell into their power, have equally made use of them in all their attacks upon towns and in battles upon plains.

Kyanized Cordage.

Four trials between Manilla, and Kyanized rope made of tow by Messrs. J. T. Crook & Co. at East Mayville, Ky, resulted in proving the Kyanized rope about fifty eight per cent. stronger than the Manilla cordage, which together with the tests as to durability, which have been previously made, will give a character and standing to this cordage which no hemp cordage has ever hitherto attained.

The Manilla used for the trial appeared to be of excellent quality and the Kyanized used was manufactured to match the Manilla as nearly as possible in size, number of yarns, closeness of twist, &c.

Well Done Lake Ontario.

The brig Iroquois is advertised to sail from Sackett's Harbor for San Francisco. Sackett's Harbor, as most of our readers are doubtless aware, is on Lake Ontario, in this State, and the Iroquois will sail down the St. Lawrence, through the Gulf, and thence South touching probably at some of the West India Islands, thence around Cape Horn to San Francisco.

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The Patent Laws.

It is our intention to make a few remarks on the views thrown out by Junius Redivivus in the articles which have appeared in our columns. Our views differ from some of those expressed by him in more than one point.—We cannot speak, as he has done, so fiercely against the powers vested in the Patent Office of rejecting applications for patents. We believe that much good has been done to inventors in denying patents for things that had been invented before. There are many things invented every year, which to our knowledge are old. The inventors of them think they are new, and in making applications for patents, they would be perfectly correct in pressing their claims as "new and useful improvements." Were patents granted for such alleged improvements, there would be a never ceasing turmoil of law suits, and the fewer of them for the pocket's sake, so much the better, for every mechanical arrangement and combination that is old, and has been in public use for more than two years, is public property—one man has no more a right to it than another. The Patent Laws, are not intended in spirit to create or protect monopolies, but to "encourage improvements in the Arts," by giving the first inventor the exclusive right to make and use his invention for 14 years. Some pretended friends of inventors have advocated the exclusive right to their inventions, and their heirs in perpetuo, upon the same principle as that on which the right of private property, is established. No man possessing the least amount of the reasoning faculty, would advocate such claims.

At the present moment, the inventors of Britain are endeavoring to get Patent Laws enacted in that country like those of the United States. This speaks volumes for our advancement in correct legislation. We agree with Junius Redivivus, in advocating the policy of previous adverse claims to applications for patents, being sent to applicants whose claims are rejected. We also agree with him in recommending a reform in our Patent Laws, to grant patents to citizens, for the introduction of new inventions and discoveries. We believe that such a reform would do our country "some service" It could at least do no harm. We also agree with him, in advocating a method to annul patents that may have been wrongly granted, through mistake or otherwise. But we are not prepared to say in what manner this should be done—it is a delicate subject. In our opinion it would not require much amendment to our present Patent Laws, to make them perfect. We want the fullest protection to inventors. We want to see their just patents sustained by law against infringements, at very little cost to them. This cannot be done at present. We want to see Judges on the Bench too, of undoubted knowledge in scientific matters, and mechanical combinations, so that they will not succumb, nor be influenced by the ability of counsel.

We have been informed that the present Commissioner of Patents intends to recommend the publishing of *brevet* specifications of patents. This if well managed, would be the means of doing a great deal of good. We are the advocates of any reasonable reform in the Patent Laws whereby, inventors' rights will be more easily sustained, than by our present laws, and whereby improvements in Science and Art may be advanced and encouraged.

European Newspapers.

Our worthy contemporary, the Boston Olive Branch, has been illuminating our whole Yankee Nation and *ourself* among the rest—correcting our mistakes and setting us *right* upon the subject of the caption above. We said in an article in our columns, published two weeks ago, that some literary papers were published in London at a price far below what we could publish the same amount of matter for here. We stick to that statement. The Olive Branch is correct in the reason it adduces for the higher price of British in comparison with American newspapers. The difference in value is not much. The tax of one penny on every British paper is about 1 cent of our money, for they are sent postage free to subscribers. We tax one way, they another. All *newspapers* are taxed one penny, but all *papers* are not taxed. The London Family Herald published weekly, only 2 cents, the London Journal only two cents (one penny.) Papers and newspapers are two different things in the eye of British Law. The tax on English newspapers, until within a few years, was four pence, yet Chambers Edinburg Journal was then published every week for one and a half pence. A paper in Britain can be published every week without being taxed for stamp. We believe that the majority of our people are not acquainted with this fact, that *papers* may be published in London every day without being liable to the stamp tax. They may contain essays, stories, receipts and such matter, as in the eye of the law is not news less than a month old. The London Journal for one penny, $1 per year, is illustrated with wood engravings and contains sixteen pages, (each 10 inches by 7) of closely printed matter, nearly as large as the old form of the Edinburg Journal. We could not attempt to produce such a literary work for double the price.

The Telegraph Controversy.

It would seem as if this controversy was never to have an end. We perceive that Mr. A. Kendall has published a long communication in the Louisville Journal in which he distinctly intimates by publishing the claims of Professor Morse for his Electro Chemical Telegraph, that the instrument used by Mr. O'Reilly on the Western Line, is an infringement, to use his own language, "if possible, more flagrant than in the Barnes & Zook instrument." We confess that we have never seen so many attempts to gull the public by certain telegraphic cliques. It is our intention to show into some of them thoroughly foundation on which their claims rest, and to show unto the American people, that *they* have the perfect right to use a Chemical Telegraph without fear. We will publish drawings and a description of the ***Free Chemical Telegraph*** in a short time, one given to the public before Mr. Morse filed his Caveat—a single circuit telegraph too, and the account of which will place some people in a most ridiculous attitude.

Poison in Eggs.

The editor of the Salem Gazette, in publishing an account of the death of Mr. Bassett's children, or Brooklyn, says:

A friend, on reading the above statement, gives us the following extract from a Cyclopedia: "The white of an egg, boiled hard in the shell and suspended in the air afterwards, a liquid drops from it which will dissolve myrrh, which is more than either water, oil, spirits, or even fire itself can effect. A little putrid white of an egg taken into the stomach occasions nausea, horror, fainting, vomiting, diarrhœa, and gripes. It inflames the bile, excites heat, thirst, fever, and dissolves the humors like the plague."

[The liquid that drops from the hard boiled egg is an oil and no more. This can be obtained by distillation. Any putrid animal matter will cause nausea, &c. as well as the putrid white of an egg. The white of an egg is composed of albumen. There is one thing singular about albumen, viz. "nitric acid at 70° disengages from it an abundance of azotic gas, and if the heat be increased prussic acid is formed after which carbonic acid and carburetted hydrogen are evolved."

Indian Cobalt.

A new field of cobalt has been discovered in the East Indies, in the mountainous country of Rajpoolanah. It is found lying in the state of a sulphate of great purity. It consists of pyrites of cobalt 65 64, sulphur 35.36 The Indian jewellers use it to color gold of a rose tint of great delicacy.

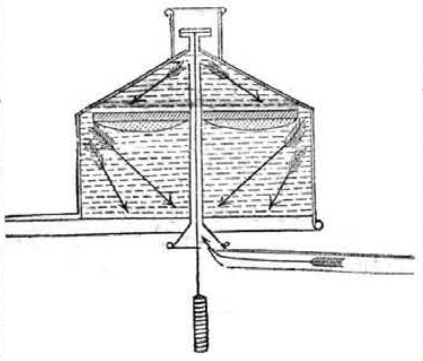
Here is a useful hint to some of our jewellers—one not to be neglected.

Manufacture of Glass.—Annealing.

(*Continued from page* 352.)

"Sheet Plate," is German sheet ground flat and then polished, these processes being conducted in the same manner as if the glass were cast instead of blown. There are some little particulars about the mode of separating the fine and coarse emery used for grinding the surfaces. The principle followed is that a stream of water will carry away fine powder but leave the coarse, and that a diminution of the velocity causes some of the suspended particles to subside; this is turned to account by having a number of copper vessels, or emery cylinders ranged in succession, each being larger in diameter and lower than its predecessors—the stream of water flows into the smallest vessel first, and is there mixed with the powdered emery stone: leaving the coarsest particles at the bottom, the stream flows into the next vessel, carrying with it all the finer portions of the powder. As the same quantity of water enters both vessels, it passes through the second with diminished velocity on account of the increased diameter; another portion of the powder is therefore deposited, and so on in succession through the various vessels, eight being the usual number employed. In the larger vessels the emery at length becomes so fine that the stream of water, though reduced to a very feeble current indeed, would carry away a portion of the powder that should be deposited, if recourse were not ingeniously had to the inclination of matter always to maintain its state whether of motion or of rest. The accompanying sketch, fig. 6, represents a section of one of the copper emery vessels—the stream of water loaded with emery powder enters by the spout to the left and falls into the funnel in the centre, the spout of which descends nearly to the bottom; the upward current of water is prevented from pervading the bottom of the vessel, by the stop or diaphragm

Fig. 8.



placed there. The stream, therefore, passes round its circumference, between it and the sides of the vessel, and only diminishes in velocity to the full extent at the top of the cylinder, as shown by the arrows; the top of the board serves as a harbor to some of the vagrant particles of emery, the coarser soon quitting the ascending current, and the still finer particles passing off by the spout to the right to the vessel next in succession. When sufficient emery has accumulated, the water and emery are let out into a tub underneath, by pressing down the central wire, thus opening the valve at the bottom which is usually retained in its seat by the spring at the top; when the emery has subsided, the water is run off by a syphon and the powder dried for use.

The sheets of glass being ground to a flat surface by the aid of the emery so carefully prepared, are polished by the friction of wooden blocks covered with felt, and kept saturated with a mixture of water and the red oxide of iron, prepared by calcining copperas. The friction is increased by loading the blocks by heavy weights, or by forcing them down by powerful springs; the power necessary to move these rubbing blocks is so enormous as to require the aid of the strongest and most expensive machinery, which is continually out of repair, not only on account of the great strain on the parts, but because the oxide of iron insinuates itself everywhere, quickly cutting away all the moving parts from which it is impossible to exclude it, as it is so fine as to float in the atmosphere, the very dust of the room being red.

The glass thus perfected is generally thinner than cast plate, but from its consequent lightness is prepared for framing, either as mirrors, or for prints; indeed for prints it is esteemed infinitely superior to cast plate, as its thinness ensures absence of color, and does not cause the paper to appear dirty. In order that sheet glass may be able to withstand the various knockings about with which it meets during its manufacture, it is necessary to make it of much harder and tougher materials than are used in making the soft glass for casting; it therefore not only takes a higher polish, but retains it longer, and does not attract moisture so soon as common plate; and being altogether an article superior to common plate glass, it is no wonder that it is much in demand; but the great expense of production, as well in enormous wages and extensive machinery, as in the loss arising from the brittleness of this beautiful substance, reduce the profits so much as to prevent the branch being much extended.

Next week we will describe the substances used for making and coloring glass.

Visit of the President to the Patent Office.

The following is an extract from a letter published in the N. Y. Tribune, describing a visit of the President to the Patent Office.

On Saturday morning an elderly and plainly dressed gentleman (accompanied by a young one of twenty-two or three) stepped into this museum of natural and artificial mechanisms, and, after spending a little time in the Commissioner's room, was attended through the various apartments. The port-folios of drawings were opened before him, and among them some splendid plates of a rotary steam engine invented by Mr. Thompson, of New York; next, models of pending applications in the offices of the Machinist and Examiners were shown him, and of these he anticipated the value of some and the defects of others.—Thence his attention was invited to the saloon of models, wherein is embodied, in visible and tangible forms, a mass of mental creations whose value no superficial observer can even begin to appreciate. Glancing over the cases, (months might be spent over one,) in which every profession of civilized society is represented by one or more devices, he every now and then paused to remark on such as related to the arts of peace—industrial and ornate—passed furtively by those connected with war, and closed his enquiries by asking "Where's your best Cultivator?" Three or four were withdrawn and on them he commented in a manner that showed him quite at home in agricultural matters; this was farther confirmed by remarks on the cereals, of which he observed by the way, that maize was his favorite, for "he could live on corn bread."

He now ascended to the upper saloon and inspected, with much interest, the collection of natural and other rarities brought home by the Exploring expedition; the statuary, paintings, Indian arms and antiquities; Washington's sword, coat and camp equipage; Franklin's cane, Smithson's domestic and chemical utensils, &c., &c, and what will one day be held as the World's charter of independence the original Declaration. After thus spending a couple of hours, this singularly affable and unostentatious visiter took leave of the officers of the Institution with a promise to call again. Now, who do you suppose he was? Why, no other than the President of the United States. This was Gen. Taylor's and his son's first visit to the Patent Office.

A warmer friend of Inventors than President Taylor does not live. He is with you heart and soul, and if you and your brethren do not realize under his Administration all that you can reasonably ask for, it will not be his fault. I will not repeat, at this time, an emphatic declaration of his in favor of the mechanics and inventors of our country, nor what he said of his readiness to urge upon Congress their just rights, but will merely add, that, amid the weighty matters pressing upon him, their interests are, in his estimation neither the least nor the last to be looked to.

To Reduce Chloride of Silver.

If the chloride of silver is placed in a solution of caustic potash in which some sugar is dissolved and the whole boiled, the silver is quickly reduced, when it is easily washed and obtained pure in the state of a powder.

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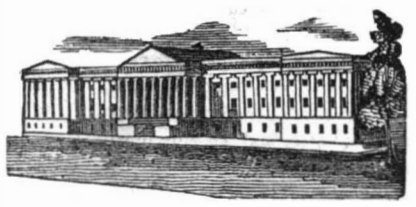

LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending July 17, 1849.

To D. L. Ewing, of Spruce Hill, Pa., for improvement in Wheat Cleaning Machines. Patented July 17, 1849.

To A. Hotchkiss, of Sharon, Conn., for improvement in Ox Yoke Fastenings. Patented July 17, 1849.

To L. B. Fisher, of Freeport, Ill., for improvement in Cutting, Crushing and Grinding Vegetables. Patented July 17, 1849.

To A. T. Linikin, of Roxbury, Mass., for improvement in Lounge and Chair combined. Patented July 17, 1849.

To A. Chapman, of Fairfax, Vt., for methed of increasing the effective length and cleansing Boiler Flues. Patented July 17, 1849.

To T. Thatcher, of Wilkesbarre, Pa., for improvement in Pump Valves and their arrangement. Patented July 17, 1849.

To A. Straub, of Milton, Pa., for improvement in Winnowing Machines. Patented July 17, 1849.

To A. Buell and T. Brown, of Lowville, N. Y. for improvement in Smut Machines. Patented July 17, 1849.

To William Avery, of Salisbury, N. Y. for for improvement in Vegetable Cutters. Patented July 17, 1849.

DESIGN.

To J. Hill and W. B. Clim, of Philadelphia, Pa. for Design for Stoves. Patented July 19, 1849.

The State of Georgia.

The following is taken from the Savannah Republican and gives a very good idea of the spirit of enterprise displayed at present in that State. Speaking of Georgia, the editor says: "When we look around us upon the great resources of our State, the fertility of its lands, the salubrity of its climate, and the varied productions of its soil, there is much cause for gratulation and pride. We have cotton lands, rice lands, grain lands, pasture lands, live oak, immense forests of pine for ship building and the turpentine trade, and a diversity of climate suited to every variety of the human constitution. We have bold and navigable rivers reaching to the mountains, a magnificent system of Railroads, between forty and fifty manufacturing establishments in various parts of the State, water power sufficient to turn all the machinery in the world, gold mines, coal mines, lime, iron, sulphur, marble, granite, &c., &c. In addition to all these, we have five colleges, for the instruction of youth, several seminaries for males and females, any number and variety of Mineral Springs, falls and rapids only surpassed by the Niagara, and a mountain of solid rock, the greatest wonder on the Continent.

If with such resources, and such improvements, and such a climate, Georgia does not become a powerful—an enlightened and powerful State, it will be the fault of her own people. We have a rich heritage. Our lot has been cast in pleasant places; and if we will but make the necessary effort, we cannot fail to secure all the benefits of such a condition. These advantages which nature and art have placed at our feet, are the five talents entrusted to our stewardship. Enlightened legislation and well directed enterprise will enable us to hand them down to posterity with a large increase. Shall we do it, or shall we bury the talents? It is for the Legislature of Georgia and the people of Georgia to answer this question. Nature has performed her part; it is for us to do the rest.

An advertising chandler modestly says that "without intending any disparagement to the sun," he may confidently assert that his octagonal spermacetis are the best light ever invented.

For the Scientific American.

The History of Steam Navigation.

Among the early experiments for propelling boats by steam was by throwing jets of water out at the stern. Rumsey in America, and Linaker in England tried this plan. A few years ago, a patent was granted to a gentleman in Baltimore, for the same thing in principle, and in the London Mechanic's Magazine for 1845, there are two drawings for propelling vessels by forcing water out at the stern of the vessels by a direct motion from the piston of the steam cylinder. Their plans are all absurd in the highest degree. In Ellsworth's Patent Office Reports for 1844, there is an account of a Ducks-foot paddle, the original inventor of which was the Earl of Stanhope, and in that report there are three other modes of propulsion different from the paddle wheel which are singular and puerile inventive emanations. The paddle as it is now made and used, has lived down an hundred proposed substitutes and has stood impregnable against every argument that has been brought against it.

To make the paddles enter and leave the water in a vertical position, various plans have been proposed from time to time. The third vessel that was built on the Clyde in Europe, was constructed with paddles on moveable axles guided by an eccentric grooved rim, or wheel to make them change their position at the right period. Mr. Robertson Buchanan a most excellent engineer was the nventor. It was a total failure, the friction was so great. This invention, has been re-invented since, but it will not do.

Another plan to make the paddles enter and leave the water without jarring in the first place, and not to lift the water, in the second place, is by feathering the paddles.—That is, to enter the water at right angles or nearly so, to the position in which the paddles enter the water in all our boats, and leave the water in the same manner. There is one paddle wheel named Morgan's, which has become somewhat famous for that purpose. Its price of construction is about double that of the common paddle wheel. Its merits have been overrated. There are four different patents in existence in England for plans to feather paddle wheels, but for ocean navigation we prefer the fixed paddles. A plan was patented 4 years ago by Mr. Byram of London to make the paddles of plate iron and set them obliquely in the wheel. Whether they are now used or not we cannot tell, but they occupied some attention when brought first before the public. All cog wheel gearing must be disadvantageous to use in combination with a paddle wheel, yet many a paddle wheel has been made with a multiplicity of cog wheel nonsense.

In 1828, Paul Steenstrop of London, patented a new paddle wheel to make the paddles enter and leave the water vertically, and to do this, each wheel had the moderate quantity of 15 small ones contained within it. It was a sublimely ridiculous affair, and its brother was exhibited in the machine room at Castle Garden, N. Y., in 1848. Perhaps it got a prize.

Paddle wheels with moveable axles and with the lower half heavier than the upper, to enter and leave the water vertically, were invented by Lieut. Skene of the British Navy in 1828, but they were worthless. There is no man who has examined the subject of steamboat propulsion attentively, but has been struck with the many palpable defective plans brought forward by men renowned otherwise for scientific attainments. In endeavoring to find out a reason for this, we have come to the conclusion that the quality—the faculty of invention like that of poetry, is not to be acquired by education, however good it may be. Well learned men have been great inventors, but so have some very illiterate men.—In poetry we have had a Lord Byron and a King James, but who has equalled the immortal Wool carder Shakespeare, or the flax hackler Robert Burns. We have had a Marquis of Worcester among our inventors, but could he compare with the immortal Watt—James Watt to be sure was a highly educated man, and were every mechanic as well educated, they would as a class stand upon a higher level to day, but we speak of him as a mechanic and an inventor—a journeyman and tradesman.

Compactness and simplicity, are the grand objects in all inventions, and the great improvements that have been made in steamboats within the past few years, is in the substitution of a great deal of wrought iron work for cast iron, bringing the power into a smaller space. For vessels that are intended for long voyages, this is a great advantage and were we to discover some metal as easily forged and worked as iron, but possessing five times its strength we would at once enhance the value of the marine engine five fold, as this is this however is not likely to be the case, we must make the best of the meterials at our command.

The first screw propeller, Hebert informs us was tried in America, but where we have not been able to learn, but in 1828 a Mr. Wm. Hale of Colchester, Eng., took out a patent for a screw propeller, but this screw was only to draw in water at the bow and force it out at the stern, but long before 1828 the screw was proposed, though not brought into use. Cowper says that as early as 1768 the screw was used by *Paucton* to propel vessels, but until within a few years, but little attention was given to the subject. But although the screw has not equalled the paddle wheel for swift propulsion, yet it has great advantages and may yet supersede the paddle, at present the number of screw propellers are on the increase.—There are no less than 30 propellers, on our upper lakes, and there are quite a number of them in the British Navy. They are more trim than the paddle wheel steamboats, and as an auxillary, such as the Sarah Sands, we believe the screw to be both advantageous and in its own place unequalled, being compact and simple. There is a great difference in the effect of different screws, Patents have been granted for the mere placing them at different angles for more effective action, and this very circumstance shows us that theory must be derived from experiment, for as doctors differ about diseases, so do engineers differ about the screw. It was a great pity that the steam propeller Great Britain was lost in Dundrum Bay—as she would have tested the value of the screw fairly. She was fitted with what is called Woodworth's screw, that is one of an increasing pitch, which is the best water screw undoubtedly. A screw of a uniform pitch is an inclined plane wrapped round a cylinder, a screw of an increasing pitch is an increasing curve wrapped round a cylinder.—Each increasing portion of an increasing pitch overtakes the disturbed water and becomes effective. It is evident that but a small portion of the blade of a uniform pitch does the duty. The Sarah Sands has a Woodcroft screw of four blades and 14 feet diameter—Ericson's propellers have a good name, but as we have stated before, the paddle wheel for 32 years has distanced all competition for speed. The term pitch means the distance between the threads of the screw.

(*To be continued.*)

Snodgrass the Inventor.

The decease of a generally little known, but useful inventor, Neil Snodgrass, is noticed by the "Glasgow Citizen," a Scotch paper. This ingenious man who has just died in his 73d year, appears to have begun his inventive career by applying steam to the purpose of heating public works, &c. Mr. Snodgrass was also the inventor of the "Scotcher," or blowing machine, commonly called in cotton mills the "Devil," by which an important saving in the raw material is effected, while the cotton is prepared in a much more uniform manner than could possibly be done by the hands. It is, however, in connexion with the steam engine that the name of Neil Snodgrass chiefly deserves to live. Notwithstanding Watt's grand invention of the seperate condenser, and the completion of his numerous other improvements, a mighty defect still existed at the very heart of the machine. How to render the piston of the steam engine perfectly steam-tight and, yet capable of moving in the cylinder without enormous friction, was, in the early history of the invention, felt to be an insuperable difficulty. This difficulty would have been considerably lessened had it been possible to construct a perfectly true cylinder; but as no skill in workmanship could secure this necessary height of perfection, the only alternative remaining was to render the periphery of the piston elastic, so as to adapt itself to the inequalities of the surface against which it was to slide. To effect this object, the piston was constructed with an upper and lower flange, between which a mass of hemp was wound, which it is necessary to renew and tighten at frequent intervals, and to keep at all times, profusely saturated with grease. In order to provide a substitute for this primitive and clumsy procees, Mr. Snodgrass passed many a night of anxious thought. Having in 1818, with the assistance of a number of master spinners who had profited by his inventions, built a mill of his own at Mile End, Glasgow, he commenced in 1823 to make experiments in packing the piston on an entirely new plan, and in 1834 his splendid invention of metallic packings was given gratuitously to the public. These packings consisted of segments of metal acted upon by springs pushed outward from the centre, and thus adapting themselves to the inequalities of surface unavoidable in the cylinder. This novel and beautiful invention of an elastic metal piston shared for a time the fate of many discoveries destined to revolutionize the world. It was ridiculed and discredited. After encountering some opposition, Mr. Snodgrass prevailed upon the late Dr. Stevenson to allow the experiment of the metallic packings to be tried in the Caledonian steamer, which was most successful. From that day up to the present time no other description of piston has been constructed. Its value is altogether incalculable. It is supposed that in the Clyde alone the saving it has effected in the mere article of tallow amounts to not less than £20,000 per annum. The importance of the invention has been prodigiously increased by the introduction of the railway system, as the old pistons would have been totally inapplicable to the locomotive.—Beyond the barren fame of the invention—and not always did he receive even that—his sole profit, if we except the premium that was awarded to him in 1823 by the Glasgow town council, from Coulter's mortification, consisted in his being employed to manufacture some 50 metallic packings at the rate af 5s per inch of the diameter of the respective pistons. In the course of his long and laborious life he introduced a variety of minor improvements in machinery, many of which continue, we understand, in general use. Among these we may mention a new application of the Mendoza pulley and wheel for leading out the mule-spinning carriage; a new plan of skeleton bars for furnaces; and an apparatus for the prevention of smoke on the Argand principle. Mr. Snodgrass also claimed to have anticipated Mr. Dyer of Manchester by two or three years in the present arrangement of the tube roving frames, for which the latter obtained a patent, by which he is said to have cleared £50,000.

[The above has been extensively copied into a great number of our newspapers. We like to give honor to whom honor is due, and to the memory of Mr. Snodgrass we pay our tributes of respect. It is true that he received a premium called the "Coulter's Premium" from the magistrates of Glasgow in 1823 for his invention of metallic packing for steam cylinders. He no doubt knew of no other at the time, but it is well known to those who are intimately acquainted with the history of the steam engine, that the Rev. Dr. Cartwright, brother of the famous radical reformer "the Major," invented the same thing in 1797, thirty years before Snodgrass, and a correspondent (an engineer) to the Glasgow Mechanic's Magazine, vol. 3, demolished all Mr. Snodgrass's claim to the invention of metallic packing. The magistrates of Glasgow exhibited the same amount of ignorance in 1823, regarding this Invention, as is now displayed in the above article of the Citizen, and by those who quote it for authentic. "Rob not one dead inventor of his honors, to decorate the tomb of another.

The letters now posted in Great Britain exceed 330,000,000 annually, a number which, taking the average length as five inches, if laid end to end, would reach 26,000 miles, a distance greater than the circumference of the earth.

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TO CORRESPONDENTS.

"J. B. of N. Y."—We will endeavor to give you all the information we can on the Sand, if there is anything new.

"F. H. W. of Geo."—There are so many different kinds of varnish, that it is not possible to tell which you mean. The fact is that varnish dries fast, just in proportion to the volatile nature of the liquid that dissolves the substance of the varnish. Chloroform has been found to make the quickest drying for all varnishes, for it evaporates in a very short time. Ether is good to dry varnish also. But these are too high priced for common use. It is not possible to combine all good qualities in one article.

"H. J. R. of Vt."—You must be a specimen of the real "Live Yankee" and no mistake. We have heard of one of them, who introduced green spectacles into England for the purpose of making their horses eat pine shavings, but we confess that you are far in advance of this genius, however we are glad to hear from you. If you visit the city next fall you must certainly call and see us. Thank you for the list of subscribers.

"M. T. A. of Mass."—The improvements which you have made in the Steam Governor are not clearly understood by us. It will be necessary, if you wish our opinion upon the subject, to make a drawing of the machine, and explain it to us by letters of reference.—The price of the papers referred to, will be $1,50.

"J. D. of Ohio."—Your letter in regard to Mr. Kase's pump has been received, and forwarded to Mr. Kase with a request that he would attend to it as we had no knowledge of the price of his pumps.

"O. H. S. of Ohio."—Your letter of the 12th inst. has been received and the remarks carefully noted. Before we can advise you farther in the matter we shall require a model representing the entire combination used in the process, or a clear drawing of all the important points in the invention. In your former letter you referred to "machinery for the purpose" and we inferred that it must include other mechanical arrangements, besides the one shown in the drawing. The mere matter of the "Kettle" would constitute the subject of a patent if it was novel and different from any other in use. We could file a caveat, if you could send us a drawing and the fee $20.

"E. A. D. of N. Y."—Your letter has been received. The method we should think best for you to adopt, is for you to come to this city and have a complete working model made, and then introduce it to the attention of the shippers and naval officers. We know of no better plan by which the merits of your invention can be ascertained, and made public.

"S. S. R. of Tenn."—Your letter containing $50, has been received, and as soon as your model reaches us, we shall write you.—Your matters will be strictly confidential, and receive our earliest attention.

"W. M. of Geo."—The price of Leonard's Mechanical Principia is $1,50, the Key is not yet published.

"J. B. A. of S. C."—Your communication of the 16th inst. will be attended to by Mail in a few days. $2 received.

"J. T. H. of Baltimore."—We should think that your improvement on the Seraphino was new, but we cannot judge so well, unless we can see the construction represented in a model. We are not prepared to judge of its mercantile value, this depends altogether upon how a patent is managed.

"L. E. S. of Pa."—Your papers have been forwarded to the office. The cost of the matter refered to in yours of the 17th, will be $8.

"W. H. S. N. Y."—The law is very explicit upon the point you refer to. It says that all patentees and assignees of patents granted, are required to stamp or engrave, on each article offered for sale, the date of the patent and if they neglect to do so, they shall be liable to a penalty of not less than $100, with costs. Any person marking the word "patent," "letters patent," or "patentee," or any words of like kind or meaning, upon any unpatented article, shall be liable to the same penalty.

"P. W. S. of Ala."—We can furnish you a 10 horse power Engine with Cylinder Boiler, warranted in every particular for $1050. It can be shipped in one week after the receipt of a draft for the amount. The necessary information for putting up will be furnished by the Engineers.

"S. G. of N. Y." "E. B. W. and H. N. F. of N. H."—Your specifications have been forwarded for signature since our last. Please return them as early as possible.

"J. A. E. of Mass" "W. P. V. of Me." and "A. H. S. of Texas."—Your papers were forwarded to the Patent Office on the 24th inst.

Money received on account of Patent Office business since July 19 :—

J. A. E. of Boston, $30. S. S. R. of Tenn. $50. D. V. of N. Y. $25. W. P. V. of Me. $10.

Soft Soap.

There is a man about the country selling receipts for making a new kind of soft soap, said to be patented. The Government must have been most confoundedly "soft soaped" to have given letters patent for such an article. When new it has the appearance of common soap ; but in a few days it looks as much like old suds as anything else. We are informed by those who have tried it that its free use will rot the washing ; also that it is not so new as is pretended the receipt having been seen not less than nine years ago. Here it is. "Take 14 pounds extra bar Soap, 4 ounces table Salt, 3 pounds Sal Soda, 1½ pound pulverized Rosin, in 5 gallons soft water on a slow fire until the whole is dissolved, then put the same into a barrel and fill it up with cool soft water, add two ounces of Spirits of Turpentine and stir occasionally while cooling, the soap is then ready for use."

Those who buy this receipt and pay two dollars for an "individual right," unless they succeed better than our neighbors, will find this a capital article for shaving.—Essex Co. Democrat.

[All the patent on the above receipt is in the speculation.

Advertisements.

MECHANICS' FAIR.

THE Salem Charitable Mechanic Association announces to the public, that their first Exhibition will be held at Mechanic Hall, in the city of Salem, commencing on Monday, September 24th, and continuing through the week.

We invite all to contribute in every department of industry which can in any way promote the comfort, convenience or improvement of mankind. We respectfully solicit the aid of Mechanics, Manufacturers, and Artists. Let them bring forward the products of the Loom and the Forge. All kinds of Machinery ; every description of Tool and Implement. Articles of Wood, Stone, Metal, Glass, Leather, Wool, Cotton, Silk, Hemp and Flax, specimens of Printing, Statuary, Painting, Daguerreo ypes, Engraving and Lithography. Articles of female ingenuity and taste will have a prominent place in the Exhibition.

The Annual Exhibition of the Essex Agricultural Society, and the Essex Institute, will take place in Salem during the week of our Fair. We trust that the Manufacturers of Agricultural Implements will bear this in mind, that we may have a good display of articles in this department. The Superintendent of the Fair will be entrusted with the care and management of every article sent for exhibition, and every facility will be given to show its useful purpose, its ingenious contrivance. Care will be taken to preserve them from injury ; trustworthy men will be in attendance day and night ; but all articles will be at the risk of the owners. Each contributor will be entitled to admission. Contributors are particularly and earnestly requested to send forward their goods in season. Articles intended for exhibition, will be received from the 1st to the 22d Sept. A check will be given for each article received, which must be presented when they are returned.

All Goods, Machinery, etc., intended for exhibition will be transported over the Railroads leading into the city, free of expense.

Medals of silver, and Diplomas, will be awarded according to the merit of the articles exhibited.—Strict justice shall be adjudged to every contributor. Impartial men, possessing intelligence, and competent knowledge in each department of art, will be selected as judges ; those only will be appointed who are not competitors for premiums.

☞ All communications in relation to the Fair, should be addressed (post paid,) to the Secretary of the Association.

ALBERT G. BROWNE, President,
jy28 ELEAZER M. DALTON, Secretary.

TURNING LATHE FOR SALE.

WE have on hand a superior Lathe, well finished and entirely new, with all the modern improvements, centre and drill chucks, two face plates, 7 inch centres, 6 feet length of bed, with slide rest, &c., which we will put upon ship board for the low sum of $125. Any person wishing the above machine can enclose a draft for the amount, and it will be shipped without delay.

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FINE ground Sea Coal, an approved article to make the sand come off the Castings easily ; fine bolted Charcoal Blacking ; Lehigh fine Dust, and Soapstone Dust for facing Stove Plates, &c. &c. ; also, Black Lead Dust, for sale in Barrels, by

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Patent Agency.

☞ From our long acquaintance and experience in Patent Office business we have no hesitancy in asserting that we are better able to judge the merits of new inventions, and are better capable of advising upon all subjects pertaining to Patents than any other concern in the United States.

Any business connected with the Patent office may be done by letter through the Scientific American office with the same facility and certainty as though the inventor applied in person. Our prices too (another important consideration to inventors) are but about half as much as the charges of most agents as the amount of business which we do, and that in connection with the publication of the Scientific American renders to us superior advantage over all other agents.

Having been often complimented by those who have entrusted their business in our care, we here repeat what very many have said. "The best Patent Agency in the United States is at the Scientific American office"

All models, drawings or communications that are sent to the Scientific American office for inspection are deposited from the eyes of the public until the necessary application for securing the invention has been made.

The best of artists are constantly employed to make drawings from models and our corps of specification writers are composed of gentlemen formerly connected with the Patent office at Washington as Examiners.

All communications should be addressed to
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SOUTH WESTERN PATENT AGENCY.

THE Subscriber has opened an Agency for the sale of patent rights, machinery, &c. of every description. My object is to enable inventors and manufacturers to realize the fullest advantage from their rights by introducing them into the vast West. All kinds of really good machinery and inventions are wanted, such as stave dressing, barrel making, morticing, sash, iron and wood turning, drilling, pressing and railroad machinery, as well as water wheels, windlasses, steam engines, cotton and woolen machinery, &c. To sell machines, &c. a model or machine will be needed ; for patent rights a power of attorney would be requisite. My charges will be moderate, and energy used to forward sales. No charge will be made until some benefit is realized. Letters (Post Paid) will receive immediate attention.

References :—Geo. Higgins and Geo. J. Mankin, New York ; S. Lafflin, St. Louis ; Hon. James H, Woodworth, Mayor of Chicago.

JOSEPH E. WARE,
a28 tf 65 Second st., St. Louis, Mo.

NOTICE.

☞ The Second Exhibition of the Maryland Institute for the Mechanic Arts, will be held at Washington Hall, in the City of Baltimore, from Thursday, 27th of September. to 13th October, inclusive. Machines, models, or goods sent to the address of H. Hazelhurst, Corresponding Ssecretary of the Institute, (expense paid) will be met with immediate attention, and every facility used to exhibit the same to the best advantage. j16 4m

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THIS improvement is a substitute for the common Grate. by which Tan, Sawdust or a like material will burn as freely as dry wood. It has been introduced in most of the Northern States into Steam Saw Mills and Tanneries with the most gratifying results. We are now prepared to furnish castings at reasonable prices at New York or Philadelphia. A model may be seen at the office of J. P. Morris & Co. Steam Engine Builders, Philadelphia, who are prepared to furnish castings at short notice.

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Agents will take notice that the right for the states of New York, Pennsylvania, Maryland & Delaware have been sold L. M. & BROS.
Athol, July 3, 1849.

TO FOUNDRYMEN AND MACHINISTS.

SOME persons who had obtained a knowledge of T. G. Bucklin's process (Patented May 8, 1849,) for treating Iron Castings, before it was patented, have attempted to sell it as a secret.

The patent embraces all possible modes of treating iron Castings with acids for the purpose of converting the surface " into Plumbago and then reducing them to the proper form and size "

I own the patent for the States of New Jersey, Pennsylvania Delaware, Kentucky and Indiana.

If Foundrymen or Machinists want the invention they had better buy the right to use it of Warren Gale my only authorized agent to sell it, and not from him unless he can present the proper documents.

This process is now in general use in all the Eastern and some of the Western Cities.

R, BALL.
Troy, N. Y. July 1849. jy21 3t*

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Ewbank,s Hydraulics and Mechanics	$2,50
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j14 tf Civil Engineer, 5 Wall st. New York.

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j27 tf

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PATENT OFFICE
m1 tf 166 Fleet Street, London.

Z. C. Robbins,

Consulting Engineer and Counsellor for Patentees.

Office on F street, opposite Patent Office, Washington, D. C. j20 tf

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use. Manufactured at Augusta, Me. and Albany, N. Y. J. G. JOHNSON.
Augusta, Maine, Oct. 28, 1848. o28 1y

☞ Messrs. Norcross & Co. No. 60 Nassau st. New York, are Agents for the sale of my Shingle Machines.

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FOR Sale wholesale, by J. A. D. Worcester, No. 43 Main st., near the City Square, and by the subscriber, GEORGE H. MARDEN
j9 3m* Charlestown Mass.

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THE undersigned have made such arrangements with Foundries, Machinists and Patentees, that they are prepared to furnish all kinds of machinery or mechanical tools at manufacturers prices. Steam Engines of any power, Horse power, Lathes, Mills of all kinds, Presses, Planing & Shingle machines, Mill and circular Saws, and every kind of machine or Tool, used by a mechanic or manufacturer. Also a lot of second hand machinery for sale low.

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Nitric Acid.

Nitric acid is obtained from nitrate of potass, by distilling it with sulphuric acid. Upon the large scale 112 lbs. of nitre and 56 lbs. of sulphuric acid yield about 52 lbs. of a red fuming nitric acid of a specific gravity of 1.48. The red color is owing to the presence of nitrous acid. Some manufacturers employ three parts nitre and two parts sulphuric acid; and if the distillation be carried on at as low a temperature as possible, an almost colorless acid is obtained. The apparatus generally employed for distilling nitric acid consists of an iron pot set in a furnace, with an earthenware head luted to it, communicating with two or three receivers, of earthenware furnished with stop-cocks of the same material; the last having a safety-tube dipping into a small quantity of water. The nitric acid, like hydro-chloric acid, is a solution of the dry acid in water; the strength of the liquid acid will therefore depend upon the quantity of real or dry acid contained therein. Tables have been constructed for the purpose of ascertaining the quantity per cent of acid and water by the specific gravity of the solution. The most extensive of those tables is that by Dr. Ure

Nitric acid of the specific gravity 1,4855 is the strongest colorless acid met with in commerce. The nitric acid of commerce is never pure; it generally contains traces of sulphuric acid, from the heat at which it was distilled being too great, and of hydro-chloric acid, on account of the nitre containing chloride of potassium. In order to detect the sulphuric acid, dilute a portion of the acid suspected to contain it with three times its weight of water, and add a few drops of solution of chloride of barium or nitrate of baryta, which, if sulphuric acid be present, will form a dense white precipitate sulphate of baryta. To detect the hydrochloric acid, add to another portion of the acid a few drops of the nitrate of silver; when if hydrochloric acid be there, a curdy white precipitate, falls which when exposed to light, gradually blackens, will be formed—the chloride of silver.

Nitric acid is used for the purpose of seperating a few of the metals, especially gold and platinum, from all others; these few being insoluble in nitric acid,—all others soluble; thus, it is in constant use in the process of assaying, for separating silver from gold. It is also used to separate tin and antimony from other metals which yield soluble oxides; for, when compound minerals containing tin or antimony and other metals are subjected to the action of nitric acid, the other metals form soluble nitrates, whereas tin and antimony remain as insoluble oxides, and can thus be separated. It is used, moreover, to peroxidise iron and manganese, by which these metals are rendered insoluble, even were they previously in solution with other substances, such as the soluble earth, &c. Dilute nitric acid separates sulphur from the sulphurets of the metals in the form of a grey powder; but, if concentrated, the sulphur unites with a portion of the oxygen, and sulphuric acid is formed. The concentrated acid detects sulphureted hydrogen, by precipitating the sulphur as a grey white powder if in solution, or by a white cloud if in the atmosphere, and at the same time destroys its fetid odor. It is used to determine with certainty that the precipitate with nitrate of silver formed when testing for chlorine, is really owing to the presence of that substance; for, though many other substances, such as phosphoric acid, carbonic acid, oxalic acid, &c., form similar precipitates, these latter are all soluble in nitric acid, the chlorine alone being insoluble. Nitric acid is a test for certain organic substances, particularly those containing nitrogen, to the solution of which it generally imparts a bright color; for instance, to a solution of guaiacum it gives a blue and green color; solutions containing animal matter, exhibit a yellow color; and it is the most characteristic test for morphia and strychnia, giving with a solution of these substances a bright blood-red color to the former, and scarlet-red to the latter. It distinguishes gum from starch, by converting the former into mucus or saclactic acid; it is much used in the manufacture of suberic acid from cork, and in the manufacture of oxalic acids, &c.

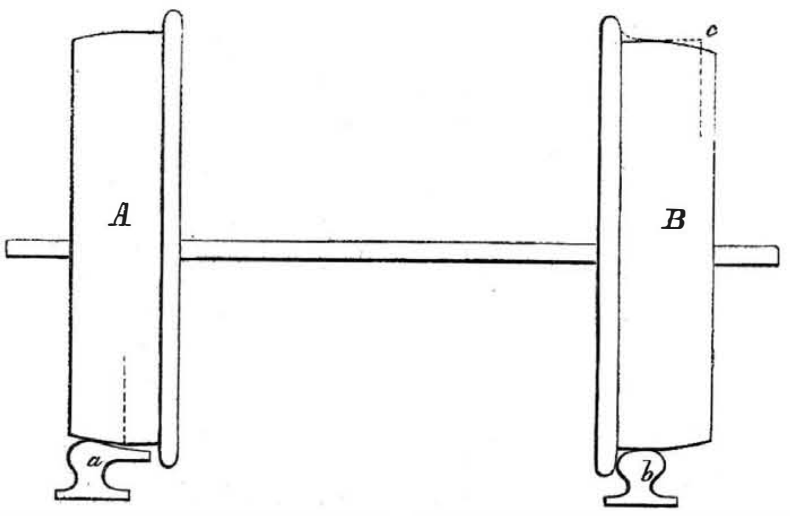
A Lost Art.

The most remarkable Chinese porcelain is the Kiasing, or azure pressed: the secret of its manufacture has been lost, but the specimens which are preserved are of inestimable value. The art was that of tracing figures on the china which are invisible until the vessel is filled with liquid. The porcelain is of the very thinest description, almost as thin as an egg-shell. It is said that the application in tracing these figures is internal, and not by external painting, as in ordinary manufacture, and that after such tracing was made, and when it was perfectly dry, a very thin covering or coating was laid over it of the same paste of which the vessel had been formed, and thus the painting lay between two coatings of china ware. When the internal coating became sufficiently dry they oiled it over, and shortly after, placed it in a mould and scraped the exterior of the vessel as thin as possible without penetrating to the painting and then baked it in the oven. It is evident that if such be the mode adopted, it would require the nicest dexterity and patient care for which the Chinese are remarkable; but although they constantly endeavor to recover the exact method, the materials have been hitherto unavailing.

Asbestos.

Pliny mentions having seen napkins of cloth made of asbestos; which being taken from the table after a feast, were thrown into the fire, and by that means were better cleansed than if they had been washed in water; but its principal use was, according to that author, for making the shrouds for the royal funerals, to wrap up the corpse, so that the human ashes might be preserved distinct from the wood.

FLAGG'S IMPROVED RAILROAD CURVE.



The purpose of this invention is to obviate the friction which at present occurs between the rails and the wheel, at the curves of railroads. That friction is, to a great degree, caused by the fact, that both wheels and rails are adapted only for running on straight lines of roads, and have no adequate means of accommodating themselves to each other, on the curved parts. The rails being laid parallel to each other, the inner rail is, of course, a curve of shorter radius than the outer; and the wheels being fixed on the same axis, and their treads being of the same diameter, the wheel on the inner rail must constantly tend to get in advance of that on the outer rail.

The nature of this invention consists in so forming both the rails and wheels for railroads that the same freedom of motion is permitted on curves as on the straight parts of the track, when a pair of wheels is placed as usual, on the same axis and both made fast thereto. It also permits the accurate guiding of the flanges, of the horizontal lateral movement of the wheels, doing away witn the swinging motion from side to side.

The alterations which are made in the rails to adapt them to the purpose of turning curves consist in giving the inner rail, on the curved part of the road, a greater breadth on its upper surface than the outer one (which remains of the same form as on the straight portions of the track) and in sloping or bevelling said inner rail inwards towards the middle of the track. The degree of inclination given to the bevelled part of the inner rail is such as to prevent the tread of the wheel from resting on any part except the higher lide of the edge of the rail, while tho lower part of the bevel of the rail is still high enough to act as a guide to the flange of the wheel which passes over it.

The alteration in the ordinary wheels, which adapt them to the rails above described, consists in making the tread in two distinct portions, one next the flange, having only the slight coneing of ordinary railroad wheels; and the other part comprising the remainder of the treads being more decidedly coneing. The first of these portions is generally made about one and a half or two inches, and is intended to run on the straight parts of the road, and to keep on the outer rail while running on the curves; the second portion is designed exclusively for running on the inner rails of curves, and is made from three to three and a half inches wide.

To pass over curves of from 500 to 1000 feet radius, a breadth not exceeding three inches on the surface of the inner rail, will be sufficient; and on curves of less than 500 feet three and a half inches will be required. In laying the inner rails upon curves, the inner or guiding edge is laid flush with the inner or guiding edge of the rail upon the straight part or tangent of the road. By widening the rails according to the shortness of the radius of curvature, the vibratory motion of the car from side to side of the track, is prevented.

There are two other kinds of wheel that are well adapted to run upon rails as above described, one of which is invented by Mr. Elgar, having a portion near the flange cylindrical and another portion coned. The other may be uniformly coned, but should be somewhat wider than the wheel now recommended.

The increased width of wheel allows of greater lateral play of the journal in the boxes, and it is advisable that this play should be about one inch—not so much to meet the case of general travel, as to facilitate the turning of short curves into warehouses, &c, upon the principle as recommended by Mr. Stimpson.

The above cut represents the bearing of the wheels when upon a curve. A, wheel running upon its smaller circumference, upon the elevated portion of the rail (marked *a*.) The wheel B, being the outer one is shown to be bearing nearest the flange, upon the ordinary T rail. The dotted line *c*, at the top of this wheel, shows the form of the present wheel as contrasted with Mr. J. F. B. Flagg's, who resides at No. 190 Arch street, Philadelphia.

Manchaneel Poison and its Antidote.

There is a tree called the Manchaneel, in the West Indies; its appearance is very attractive, and the wood of it peculiarly beautiful; it bears a kind of apple resembling the golden pippin. This fruit looks very tempting, and smells very fragrant, but to eat of it is instant death, and its sap or juice is so poisonous, that if a few drops of it fall on the skin, it raises blisters and occasions great pain.—The Indians dip their arrows in this juice to poison their enemies when they wound them. Providence has so appointed it, that one of these trees is never found, but near it grows a white wood, or a fig tree, the juice of either of which, if applied in time, is a remedy for the diseases produced by the Manchaneel.

Liquid Glue.

One quarter of a pound avoirdupois of shell lac, dissolved in three ounces of apothecaries measure of naptha; put the shell lac into a wide-mouthed bottle, and pour the naptha upon it; cork it up and stir it with a piece of wire two or three times during the first six and thirty hours. It can be made without any measurement at all, by adding shell lac to naptha until it becomes of the consistence of cream. When the shell lac is thoroughly dissolved in naptha it forms a liquid glue always ready for use, and peculiarly applicable to the pattern-maker, joiner, or carpenter, and perfectly waterproof, with which the longest joint may be rubbed close.

LITERARY NOTICES.

The July No. of the Pictorial National Library is now on our table. We cannot speak too highly of this work, as we esteem it one of the most valuable publications issued in this country. The present number contains a great amount of useful and entertaining matter, from the pens of some of our best writers, and is embellished with a number of fine engravings. This number commences the volume. Wm. Simonds, Boston, publisher.

We are indebted to Messrs Long & Bro. of No. 43 Ann street, N. Y., for the August No. of Godey's Lady's Book, which is decidedly the gem of the season.

Mr. Godey seems to be indefatigable in his exertions to render his publication worthy of the extensive patronage which it has received, and in this number—as in all others—he has been eminently successful.

The August number of Graham's American Monthly Magazine is now on our table. It contains some very beautiful engravings, among which the Siesta by Ellis, is of superior merit. Mr. Graham, evidently, does not intend to allow his Magazine to be surpassed by any, if beauty of embellishments, and choice reading matter can prevent it. W. H. Graham, *Brick Church, has the work for sale.*

Holbrook's New England Railroad Guide and Traveller's Pocket Companion, is an admirable little publication, containing all the information a traveller can possibly require in his passage to any part of New England.

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